

The DAWN Report

February 9, 2011

Monthly and Seasonal Variations in Emergency Department Visits for Drug-Related Suicide Attempts: 2004 to 2008

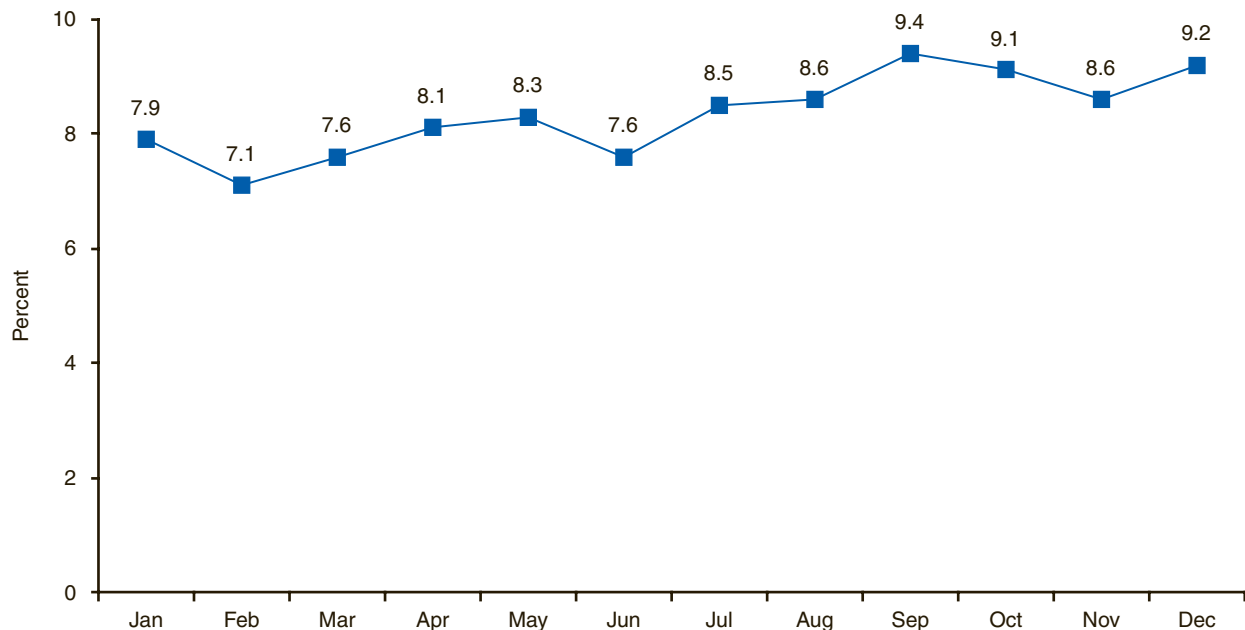
In Brief

- Combined data from 2004 to 2008 indicate that there was an annual average of 178,423 ED visits for drug-related suicide attempts by patients aged 12 or older; the number of these visits ranged from a high of 16,812 visits in September (9.4 percent) to a low of 12,656 visits in February (7.1 percent)
- Among adolescent males aged 12 to 17, the percentage of drug-related suicide attempt visits ranged from 2.5 percent in February to 18.9 percent in December
- Although there was considerable gender variation by month, there were no significant gender differences by season (autumn, winter, spring, or summer) for any age group

Many U.S. and international researchers have tried to discern seasonal suicide patterns, but they have reached no clear consensus.¹ Traditional social and family events that occur seasonally, such as holidays and school activities, may influence depression and suicidal behaviors. Media reports, such as the “Holidays without Cheer” story run by *CBS News* in 2002, have suggested that these episodes occur more frequently during the winter holiday season.² Additionally, fluctuations in weather and sunlight caused by the changing seasons can influence depressive symptoms, such as those experienced by people with seasonal affective disorder.

Some mortality data research supports the existence of a relationship between seasonality and completed suicides.³ However, suicide attempts that do not result in death are more common than completed suicides and often require emergency medical attention.⁴ Data from emergency departments (EDs) can provide information about risks for suicide attempts, including monthly and seasonal trends.

Figure 1. Monthly Variations in Drug-Related Emergency Department (ED) Visits Involving Suicide Attempts: Average Annual Visits, 2004 to 2008



Source: 2004 to 2008 estimates from the 2008 SAMHSA Drug Abuse Warning Network (DAWN).

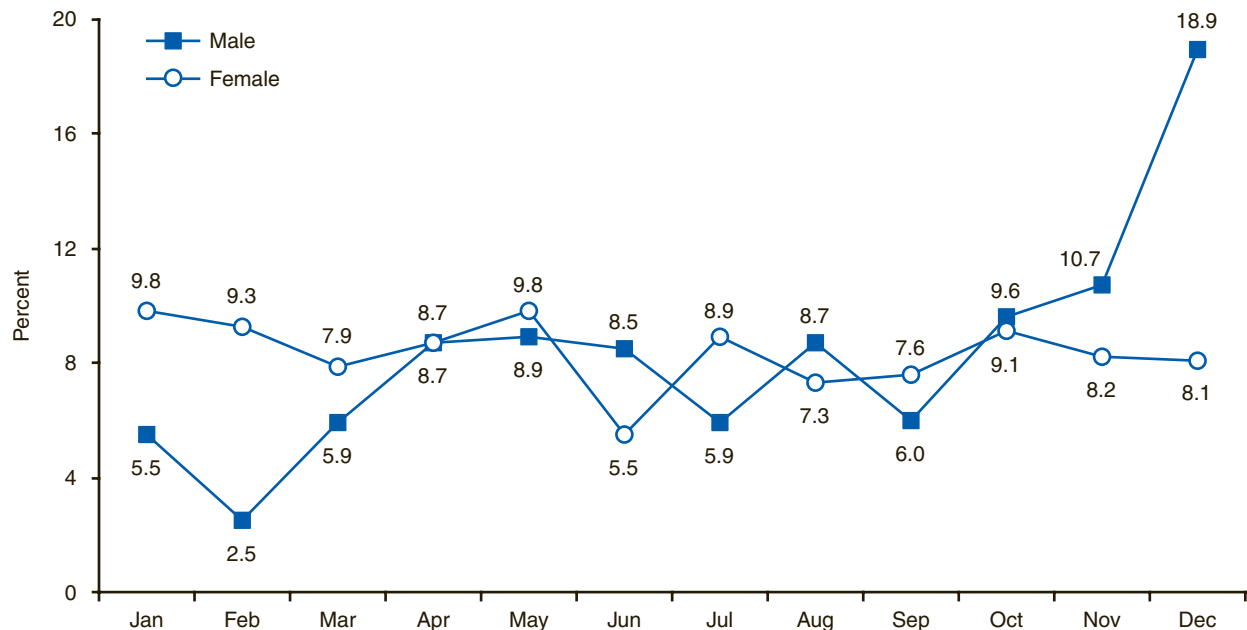
The Drug Abuse Warning Network (DAWN) is a public health surveillance system that monitors drug-related ED visits in the United States. To be a DAWN case, an ED visit must have involved a drug, either as the direct cause of the visit or as a contributing factor. DAWN data can be used to examine ED visits for drug-related suicide attempts. Although DAWN includes only suicide attempts that involve drugs or alcohol in combination with drugs, these attempts are not limited to drug overdoses. If there is drug involvement in a suicide attempt by other means (e.g., a patient cuts his or her wrists while smoking marijuana), the case is included as drug related. Excluded are suicide attempts with no drug involvement and suicide-related behaviors other than actual attempts (e.g., suicidal ideation or suicidal thoughts); also excluded are suicide attempts involving only alcohol for patients aged 21 or older. This issue of *The DAWN Report* focuses on monthly and seasonal trends associated with ED visits for drug-related suicide attempts

by age, using annual averages based on combined 2004 to 2008 data.

Overview

Combined data from 2004 to 2008 indicate an annual average of 178,423 ED visits for drug-related suicide attempts by patients aged 12 or older.⁵ The number of these visits ranged from a high of 16,812 visits in September (9.4 percent) to a low of 12,656 visits in February (7.1 percent) (Figure 1). Statistical comparisons by month show that the percentage of visits in September (9.4 percent) was higher than the percentages of visits made in January (7.9 percent), February (7.1 percent), March (7.6 percent), and June (7.6 percent).

By season, 27.1 percent (48,415 visits) occurred in autumn (September, October, and November), 24.2 percent (43,171 visits) occurred in winter (December, January, and February), 24.0 percent (42,800 visits) occurred in spring (March, April,

Figure 2. Monthly Variations in Drug-Related Emergency Department (ED) Visits Involving Suicide Attempts by Adolescents Aged 12 to 17, by Gender: Average Annual Visits, 2004 to 2008

Source: 2004 to 2008 estimates from the 2008 SAMHSA Drug Abuse Warning Network (DAWN).

and May), and 24.7 percent (44,037 visits) occurred in summer (June, July, and August). Seasonal comparisons show that the percentage of visits in autumn was higher than the percentages of visits in winter and spring.

Monthly and Seasonal Variations for Adolescents Aged 12 to 17, by Gender

Combined data from 2004 to 2008 show that adolescent males aged 12 to 17 made 5,283 visits to the ED for drug-related suicide attempts. The percentage of these visits ranged from 2.5 percent in February to 18.9 percent in December (Figure 2). Statistical comparisons by month show that the percentage of visits in December (18.9 percent) was significantly higher than in January (5.5 percent), February (2.5 percent), March (5.9 percent), July (5.9 percent), or September (6.0 percent).

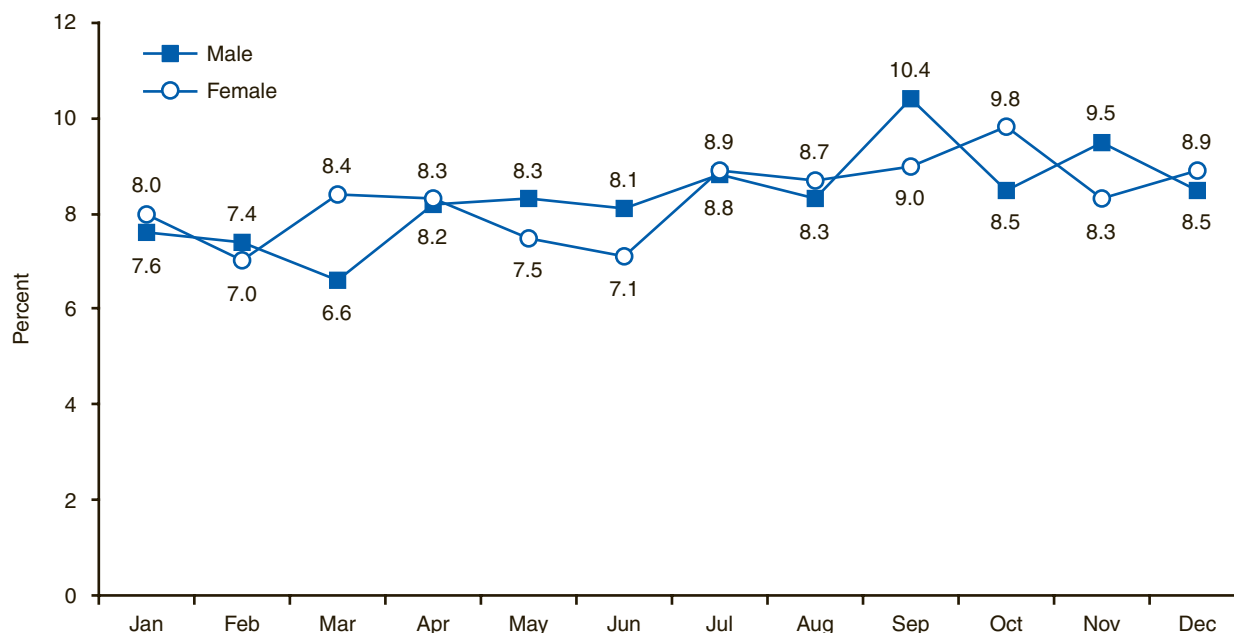
Of the 15,552 visits female adolescents aged 12 to 17 made to the ED for drug-related suicide

attempts, the percentage of visits ranged from 5.5 percent in June to 9.8 percent in January and May. Month-to-month comparisons show that the percentages of visits in January and May were statistically higher than the percentage of visits made in June, but were not significantly higher than visits in any other month. By season, there were no statistically significant differences found for adolescent males or females.

Monthly and Seasonal Variations for Adults Aged 18 to 49, by Gender

Combined data from 2004 to 2008 indicate that adult males aged 18 to 49 made 55,117 visits to the ED for drug-related suicide attempts. Of these, the percentage of visits ranged from 6.6 percent in March to 10.4 percent in September (Figure 3). Monthly comparisons show that the percentage of visits in September (10.4 percent) was significantly higher than all months with the exceptions of July

Figure 3. Monthly Variations in Drug-Related Emergency Department (ED) Visits Involving Suicide Attempts by Adults Aged 18 to 49, by Gender: Average Annual Visits, 2004 to 2008



Source: 2004 to 2008 estimates from the 2008 SAMHSA Drug Abuse Warning Network (DAWN).

(8.8 percent), October (8.5 percent), November (9.5 percent), and December (8.5 percent).

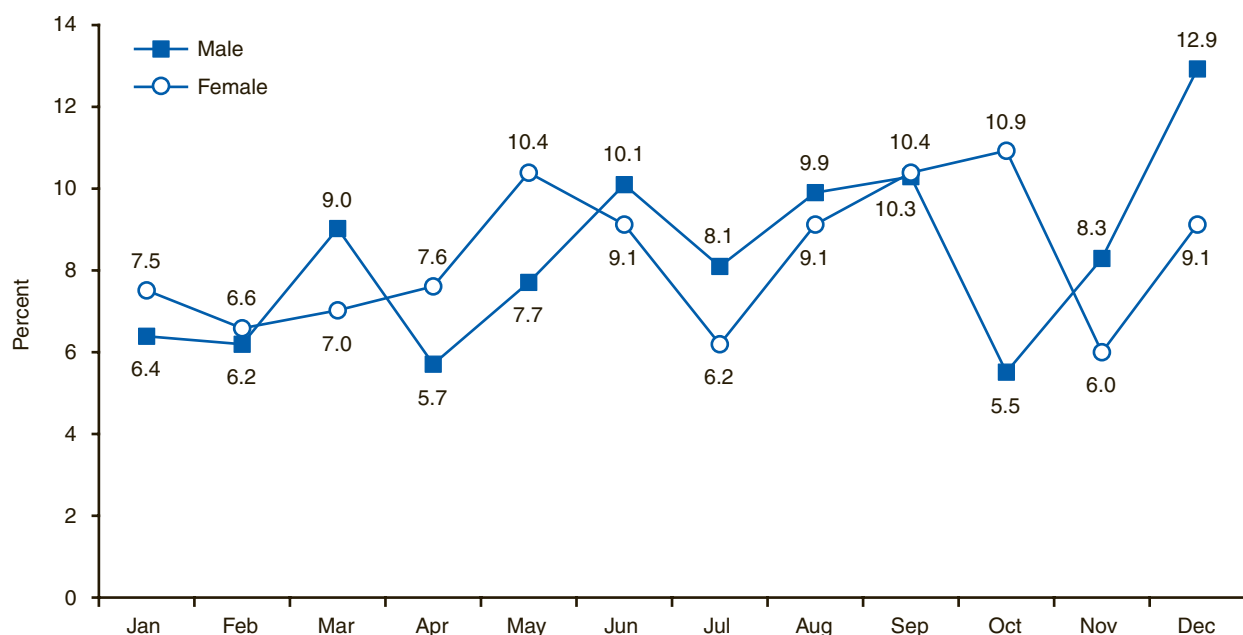
Combined data from 2004 to 2008 show that adult females aged 18 to 49 made 78,191 visits to the ED for drug-related suicide attempts. The percentage of these visits ranged from 7.0 percent in February to 9.8 percent in October. Monthly comparisons show that the percentage of visits for females in this age group in October (9.8 percent) was significantly higher than the percentage of visits made in February (7.0 percent), May (7.5 percent), or June (7.1 percent).

The only seasonal differences for drug-related ED visits involving suicide attempts were found among males aged 18 to 49. Specifically, seasonal comparisons for males in this age group show that the percentage of visits in autumn (28.4 percent) was higher than the percentages of visits in winter (23.5 percent) and spring (23.0 percent).

Monthly and Seasonal Variations for Adults Aged 50 or Older, by Gender

Of all male age groups, the number of drug-related suicide attempts was lowest among those aged 50 or older (9,737 visits). The percentage of visits among males in this age group ranged from 5.5 percent in October to 12.9 percent in December (Figure 4). Month-to-month comparisons show that the percentage of ED visits made in December (12.9 percent) was significantly higher than the percentage of visits in April (5.7 percent) or October (5.5 percent).

Between 2004 and 2008, 14,366 visits were made to the ED for drug-related suicide attempts by adult females aged 50 or older. The percentage of visits made by older females ranged from 6.0 percent in November to 10.9 percent in October. However, monthly comparisons show that the percentage of ED visits in October was only significantly higher than the percentage of visits made in November. There were no

Figure 4. Monthly Variations in Drug-Related Emergency Department (ED) Visits Involving Suicide Attempts by Adults Aged 50 or Older, by Gender: Average Annual Visits, 2004 to 2008

Source: 2004 to 2008 estimates from the 2008 SAMHSA Drug Abuse Warning Network (DAWN).

statistically significant differences found by season for this age group by gender.

Discussion

Although factors that influence suicide attempts are complex and difficult to predict, some evidence suggests that poor winter weather and proximity to fall/winter holidays may lead to increased suicide attempts. However, combined 2004 to 2008 DAWN data indicate that adolescent and older males showed increases in attempted suicide in December, while adults aged 18 to 49 and females aged 50 or older showed increases in September and October. With the exception of males aged 18 to 49, no distinct seasonal patterns were found for any age group by gender. The group with the largest variation—adolescent males—showed its highest percentage of visits in December and its two lowest percentages in January and February, suggesting no clear winter pattern for adolescent males.

Because these data reflect only drug-related suicide attempts that result in an ED visit, the data may not be representative of overall suicide attempts. Thus, more research is needed to examine monthly and seasonal patterns surrounding suicide attempts in general.

End Notes

- 1 Kposowa, A. J., & D'Aiura, S. (2010). Association of temporal factors and suicides in the United States, 2000-2004. *Social Psychiatry and Psychiatric Epidemiology*, 45, 433-445. doi:10.1007/s00127-009-0082-9 [Available as a PDF at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2834764/pdf/127_2009_Article_82.pdf]
- 2 Neal, R. (2002, December 3). Holidays without cheer: Elderly are especially at risk for depression this time of year. *CBS News*. Retrieved from <http://www.cbsnews.com/stories/2002/12/02/earlyshow/health/main531415.shtml>
- 3 Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. (2009, December 21). *Holiday suicides: Fact or myth?* Retrieved from <http://www.cdc.gov/ViolencePrevention/suicide/holiday.html>
- 4 Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. (2009). *Understanding suicide: Fact sheet*. Retrieved from <http://www.cdc.gov/violenceprevention/pdf/Suicide-FactSheet-a.pdf>
- 5 Any ED visit for which age or gender was unknown was excluded from the analyses in this report.

Suggested Citation

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Findings from SAMHSA's 2004 to 2008 Drug Abuse Warning Network (DAWN)

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The Drug Abuse Warning Network (DAWN) is a public health surveillance system that monitors drug-related morbidity and mortality. DAWN uses a probability sample of hospitals to produce estimates of drug-related emergency department (ED) visits for the United States and selected metropolitan areas annually. DAWN also produces annual profiles of drug-related deaths reviewed by medical examiners or coroners in selected metropolitan areas and States.

Any ED visit related to recent drug use is included in DAWN. All types of drugs—licit and illicit—are covered. Alcohol involvement is documented for patients of all ages if it occurs with another drug. Alcohol is considered an illicit drug for minors and is documented even if no other drug is involved. The classification of drugs used in DAWN is derived from the Multum *Lexicon*, copyright 2010 Lexi-Comp, Inc. and/or Cerner Multum, Inc. The Multum Licensing Agreement governing use of the *Lexicon* can be found at http://dawninfo.samhsa.gov/drug_vocab.

DAWN is one of three major surveys conducted by the Substance Abuse and Mental Health Services Administration's Center for Behavioral Health Statistics and Quality (SAMHSA/CBHSQ). For more information on other CBHSQ surveys, go to <http://oas.samhsa.gov>. SAMHSA has contracts with Westat (Rockville, MD) and RTI International (Research Triangle Park, NC) to operate the DAWN system and produce publications.

For publications and additional information about DAWN, go to <http://DAWNinfo.samhsa.gov>.



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